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ABSTRACT

This report provides the results of a comprehensive 4-year study of a statewide instructional improvement effort in Maryland; presents the characteristics of successful staff development for each of four implementation strategies (active teaching, mastery learning, student team learning, and teaching variables); and identifies the relationships among key elements of planning, training, and classroom application. The staffs of eight local education agencies (LEAs) participated as they implemented instructional improvement. Each year, data collected through documents, observation of classroom teaching, local workshops, and questionnaires were analyzed to identify the most successful project(s) for each of the four implementation strategies and to determine the characteristics of staff development efforts that influenced project success. The bulk of the document consists of summaries of eight projects (two per implementation strategy) that were identified as successful in terms of instructional gain; scope and intensity of implementation; fidelity of implementation in reflecting the developers' intentions; cross-hierarchical harmony; fulfillment of contracted responsibilities; and indication of project institutionalization as state funding ceased. (LL)

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ALIGNING STAFF DEVELOPMENT WITH IMPLEMENTATION STRATEGIES

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Introduction

When a local education agency (LEA) decides to initiate a program improvement project, a multitude of decisions must be made, most of which are influenced by perceived need and staff interest. Early in the planning phase, interest is translated into commitment or level of effort which indicates the scope of the project and implementation strategy to be used. Regardless of the scope, strategy, or nature of the improvement program (innovation or model), training must be planned. The nature and extent of the training provided will influence the relative success of the project.

This paper describes the characteristics of successful staff development for each of four implementation strategies used in the adoption of instructional improvement models. It also identifies relationships among key elements of planning, training, and classroom application. Findings are drawn from a comprehensive four year study of a statewide instructional improvement effort.

Program Overview

This paper focuses on training activities in which staff of eight LEAs participated as they implemented instructional improvement. Their projects were part of a larger state program. In order to provide a context for the findings presented, the state initiative is briefly described here.

In the fall of 1980, the Maryland State Department of Education (MSDE) initiated School Improvement Through Instructional Process (SITIP). Teams from each of the 24 LEAs attended four one-day orientation sessions conducted by the developers of instructional models proven effective in increasing student achievement in structured academic subjects. The models were: Active Teaching (AT), Mastery Learning (ML), Student Team Learning (STL), and

Teaching Variables (TV). Following the orientation sessions, in the spring of 1981, 19 LEAs were funded by MSDE to implement projects. In 1982 the remaining five LEAs decided to participate and they too were funded.

In the summer of 1981 LEA teams (each including teachers, school-based administrators, and central office staff) attended three-day training sessions on the model of their choice. During each subsequent year, MSDE sponsored an Instructional Leadership Conference, and one or two model-specific follow-up workshops. At these events LEAs learned about each other's activities; heard presentations by nationally recognized experts on instructional improvement, planned change, and staff development; and participated in planning and problem-solving discussions exploring implications of results of a "third-party" evaluation study. During implementation, LEAs also received on-site assistance from MSDE staff assigned to SITIP.

While each LEA was free to determine the scope and intensity of its SITIP project, to decide on grade levels, subject areas, implementation strategy, training activities, and so on, all were expected to address certain objectives and to attend to certain guidelines. These were mutually understood by participating LEAs and MSDE, and orally contracted before projects got underway.

- Each project should result in instructional gain: (1) increase in teachers' knowledge and skill in effective instruction and a positive attitude toward the program, and (2) increased student achievement and acceptance for their own learning, and a positive attitude toward the program.
- Each project should maintain a reasonable scope and intensity of implementation (in the context of the strategy selected), and should maintain the fidelity of the model (as defined by the developer).
- Each project should maintain cross-hierarchical harmony through interactive support, participatory decision-making, and good communication.

- Project staff should carry out the responsibilities agreed upon during contracting and planning activities.

- By June 1984, each project should make an informed decision to institutionalize or to end implementation as state funding stopped.

Implementation Strategies

All LEAs submitted proposals requesting state funds. Since some districts implemented more than one model, there were 29 projects in 24 LEAs. An analysis of project plans showed that there were four implementation strategies, and that staff interest was the strongest influence in selecting a strategy (and model). Later, other data showed that the strategy determined the amount of work done by central office staff during implementation. The strategies were:

- District-wide. All schools at a given level (usually elementary) were involved, with the selected model used all the time for a given subject and grade level(s) by participating teachers. This strategy required the most work from the most people, with central office staff enthusiasm and effectiveness important for success. Three of the 24 LEAs used this strategy. The largest project involved 671 teachers in 33 schools by the end of the third year of implementation.

- Pilot/District. One to three schools were involved the first year, with strong central office support for school-based activities. In the majority of cases, participating teachers used the model all the time for a given grade and subject. Evidence of success led to greater administrative involvement, and, in some cases, use of key teachers as trainers. This strategy was the most feasible, especially for complex models. Five LEAs began with this strategy. By the end of the third year the largest pilot/district site involved 700 teachers in 25 schools.

- Capacity Building. Training was conducted by the LEA team members who had been trained by MSDE. There was no formal administrative commitment to press for implementation. Teachers volunteered to "try" the model at their discretion, usually using it sporadically or for a single unit of instruction. Where this strategy was effective an administrator "energized" the project. Five projects began with this strategy, of which three faded out as state funding was reduced. At the end of the third year the largest capacity building project involved 116 teachers in 15 schools.

- Lighthouse. A single school was involved and no commitment was made by central office staff to advocate further use or initiate planning

or training for other schools. Success was usually broadcast informally. This strategy put the greatest burden on school staff. There were 20 lighthouse sites initially: 14 by the end of the third year. The most successful one had involved seven teachers (in five schools).

During the three years of implementation, several projects changed their strategies, increasing or decreasing scope according to relative instructional gain and administrative involvement. For widespread implementation, the lighthouse strategy was least effective, but this strategy was successful (on a small scale) when the model matched a principal's priority. Capacity building was least effective for maintaining systemic implementation, but did increase teachers' knowledge of alternatives. Overall, the pilot/district strategy was most effective, particularly for complex models in large LEAs. The district-wide approach was successful with less complex models if attention was paid to building the commitment of school based staff (e.g., through staff development).

Methods and Data Sources

Over a period of three years data were collected measuring state and local efforts on the SEA-initiated instructional improvement program. By June 1984, 24 LEAs (29 projects) were involved, including over 180 schools (66% elementary), and more than 2,700 teachers using the four instructional models in one or more of the major academic subjects. Each year, data were collected by: (1) analysis of documents e.g., LEA student test data summaries, local plans, training materials; (2) observation of classroom teaching and local workshops twice a year in eight LEAs, plus observation of all SEA workshops and planning meetings; and (3) questionnaires completed by project coordinators twice a year, and by representatives of each role group (teachers, school based administrators, and central office staff) once a year.

Results were analyzed to identify the most successful project(s) for each of the four implementation strategies. (Overall project success included: scope and intensity of implementation reflecting local goals, and fidelity reflecting the innovation developers' intentions; increased teacher knowledge and skill; improvement in student achievement and attitude; maintenance of cross-hierarchical harmony; and strong indication of project institutionalization as state funding was reduced.) For those projects identified as successful, data were analyzed to determine the characteristics of staff development efforts that influenced project success.

Staff Development: Rationale and Theory

The SITIP program design was strongly influenced by MSDE experience of effective staff development practice, and by MSDE knowledge of relevant research. This experience was shared with LEAs by modeling and provision of technical assistance. The knowledge was shared by dissemination of materials and by conferences on training conducted by MSDE staff and "experts" such as Robert Bush, Bruce Joyce, and Madeline Hunter. In order to review the knowledge base of many of the educators involved in the projects described in this paper, and to summarize state-of-the-art thinking on staff development, the rationale and theory are presented here.

Current practice suggests that a specific training activity (e.g., session at a conference, inservice workshop) is considered effective when it: (1) has a skillful and knowledgeable presenter who uses a type of presentation which is tied to expected outcomes (knowledge, skill acquisition, behavioral change), and applies the principals of adult learning, allowing for both active and receptive roles of participants; (2) has a clear purpose and includes appropriate content based on theory, research, and best practice;

(3) is held at a convenient time and place; (4) is perceived as useful to the majority of participants; (5) can be followed-up by application assistance if appropriate; and (6) is evaluated.

A staff development program is considered effective when it: (1) has clear goals, and a written comprehensive plan; (2) is based on the philosophy that the purpose of staff development is to improve classrooms and schools through the continuous professional development of educators and support staff, contributing directly to excellence in teaching and maximization of student learning; (3) furthers organizational goals and meets individual needs, and is coordinated with other learning opportunities; (4) is planned and supported (commitment, time, funds) by all groups; (5) maintains integrity of content (knowledge/skills), but adjusts delivery processes to meet varying degrees of sophistication of participants; (6) includes a variety of ongoing activities including workshops, school-based problem-solving meetings, group planning or curriculum activities, coaching, and individual study and/or practice; (7) schedules activities during non-instructional time and summers, providing for inservice credit release time or similar incentives; and (8) is reviewed and revised according to evaluation data.

Evaluation (and program design) should relate to the intended outcomes of the staff development activity or program. Criteria for "success" may range from increased awareness of given information, to classroom application and institutionalization of a given curriculum or instructional model.

If the criteria for success of a training activity focus on responses of trainees during and immediately after an event, Knowles' (1970) activities and outcomes are useful. In general he suggests that while trainees may become more knowledgeable by attending to visual and aural presentations,

concept-building requires more active involvement through discussion; skill building requires participation and practice; and change in attitudes requires self-disclosure and exploration of the relationship of the new information* to trainees' existing work and beliefs.

If the criterion for success is classroom application of an instructional process or new curriculum, as was the case for the projects described in this paper, the research summaries by Joyce and Showers (1984) suggest that teachers need to be involved in a series of activities. They argue that although a few teachers may develop skills or apply ideas following rationale and theory building, most need to be involved in four components of: (1) rationale and theory building, (2) demonstration and modeling, (3) practice and feedback, and (4) on-site coaching. Thus, teachers move from awareness to conceptualization, to skill development, to application of information transferred from a workshop setting to their own classrooms. The fifth component--integrated learning*--may be less important for teachers for whom the new information is closely related to their existing information: in such cases executive control may take place through on-site coaching. However, when the new information is complex, different from existing practice, very situation specific, or needs to be adapted in order to fit a new environment or audience, integrated learning is essential if vertical transfer is to take place. Joyce and Showers state that such transfer is difficult for teachers who focus on the specifics of the new information rather than the underlying concepts.

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* Integrated learning is analysis of relationships of new and old information and situational influences, and development of integrated application that fits situations different from the initial "projected conditions."

Before high-cost training is undertaken, the intended outcomes need to be clearly understood, and trainees/sponsors need to negotiate with trainees and policy makers to ensure a common understanding and to determine mutually relevant involvement. If a common purpose is served, such contracting facilitates task-sharing, and results in agreed-upon outcomes in a cost-effective manner. These findings are supported by the work of Roberts and Woolf (1984). They suggest that large scale staff development requires contingency planning rather than routinized training design. Executive control -- bringing about widespread program improvement -- is influenced by: (1) the extent to which participants understand and agree to intended outcomes and responsibilities (contracting); (2) the match of training to real local priorities (resulting in administrative expectations for implementation); (3) the timeliness of the training content; and (4) the perceived value of materials provided.

MSDE staff involved in SITIP understood the research reviewed above, presented workshops on the topic, and applied the concepts in the training and assistance they conducted for LEA staff. While central office staff and local planning team members thus had the opportunity to integrate this knowledge into their own projects, the majority of teachers could only benefit indirectly. The remainder of this paper describes the extent to which local teams applied this knowledge, designing strategies to follow through with training and coaching, and how local staff development approaches were related to the implementation strategies selected.

Implementation Strategies and Training: Eight Case Studies

Eight projects (2 per implementation strategy) were identified as successful in terms of instructional gain; scope and intensity of implementation as locally planned; fidelity of implementation reflecting the

Table 1

Scope of Implementation by LEA: June 1984[1]

LEA/Project	Strategy	Model	#Schools in District	#Schools in SITIP	Type	#Teachers	#Students	Subject Areas
Danford	DW	AT	42	33	E,J/M	671	18,650	M
Delco	DW	AT	24	16	E	154	3,850	M
Pitmore	PD	ML	144	6	E	32	1,094	M
Paisley	PD	AT	25	25	E,J/M,H	700	13,000	M
Charters	CB	STL	25	15	E,J/M,H	116	650+*	All academic
Cannes	CB	STL	9	2	J/M,H	23	800	M
Laurel	LS	ML	29	5	J/M	7	700	SS
Lambert	LS	TV	12	3	J/M	18	468+*	M,R/LA

* At the pilot middle school.

Strategy: DW=district wide
PD=pilot district
CB=capacity building
LS=lighthouse school

Model: AT=Active Teaching
ML=Mastery Learning
STL=Student Team Learning
TV=Teaching Variables

Subject area: M=mathematics
SS=social studies
R/LA=reading/language arts

Type: E=elementary
J/M=junior high/middle
H=high school

[1] Data reflect project status at the end of the third year with the exception of Delco and Laurel that were involved for only two years.

developers' intentions; cross-hierarchical harmony via support, decision-making, and communication; fulfillment of contracted responsibilities; and indication of project institutionalization as state funding ceased. These eight projects are described in Table 1. The data presented in the table reflect the projects' status at the end of June 1984 which was the third year of implementation for all the projects except Delco and Laurel which had only been involved for two years.

As can be seen in Table 1, all four models were represented, with AT the most prevalent. The number of schools per district ranged from two to 33 and were of all types (i.e., elementary, junior high/middle, high school). Mathematics was the most prevalent subject area. The number of teachers involved ranged from seven to 700.*

Each district involved in the school improvement project sent a team of pilot teachers, school administrators, and central office staff to the state-sponsored training sessions. Educators also received on-site coaching from state technical assistants. How the local teams trained and assisted other educators in their district and how the staff development approaches used were related to the implementation strategies selected are described in the following sections of the paper.

District-wide

Danford and Delco had successful projects using a district-wide implementation strategy. Danford was involved in the state-sponsored improvement

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* Fictitious names are used for school districts. Included in the eight is one urban district (of 144 schools), three mixed suburban and rural (ranging from 24 to 42 schools each), and four rural (ranging from 9 to 25 schools). All districts received the same support from the state department. Thirty percent of the total number of schools in these eight districts were involved in model implementation.

effort for three years, whereas Delco (beginning later) was involved for two years. Both districts implemented AT in mathematics at the elementary level, and Danford also included the middle schools in the second year of the project. The staff development approaches used by each of these districts are described below.

Danford. AT was adopted by the district to help improve mathematics curriculum and instruction. After some initial resistance during the earlier stages of the project, especially in the middle schools, AT became institutionalized in all the elementary and middle schools by the end of year three (671 teachers in 33 schools).

Even though AT was a relatively simple model to implement with little materials development required, the large number of implementers involved presented a challenge to those responsible for staff development. Because it was a district priority, with implementation mandated for all elementary and intermediate mathematics instruction, AT received strong administrative support, especially in the areas of training and follow-up assistance. A team of central office staff headed by the project coordinator, assumed major responsibility for project planning, training, and implementation.

The staff development approach used by Danford to train the elementary teachers during the first year of the project was carried out in five phases: (1) the central office team developed workshop training materials and procedures (format and script) for conducting the workshops; (2) supervisors and school administrators were trained to implement the model and some were trained on how to conduct the workshop training; (3) training was conducted at concurrent workshops (attended by teachers from several schools within a geographic area) by central office staff and school administrators (with some help from state staff) using the common training format and materials

developed by central office staff*; (4) annual follow-up meetings were conducted by central office staff to provide assistance and to maintain quality implementation; and (5) supervisors and school administrators expected to see consistent and accurate use of AT and provided feedback and coaching on a one-to-one basis when necessary.

Training for the middle school teachers during year two was conducted at each individual school by school administrators using the centrally developed training materials. Coaching was provided on a one-to-one basis by both school administrators and central office staff.

The few teachers that had not received training during the first two years of the project were trained and coached by school administrators and veteran teachers. Budget cuts and staff reassignments reduced staff development activities (e.g., follow-up workshops, supervisor observations and coaching) during year three, making it difficult to maintain staff expertise and motivation, and leading to some misunderstandings about model implementation.

Because it was a district-wide effort, successful AT implementation required strong central office involvement. Central office staff directed a large part of their resources toward staff development which resulted in accurate implementation and district-wide institutionalization of the model. Staff development was systematic, uniform, and comprehensive. It included rationale and theory building, demonstration, practice and feedback, and ongoing assistance through systematic, regular, on-site coaching and follow-up workshops. Workshops were held at convenient times and places, teachers were

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* This workshop approach helped to insure that training was uniform while allowing the workshops to be held in convenient locations with a smaller number of participants to facilitate group discussion and assistance.

given release time to attend, and presenters were knowledgeable in the content to be presented and the method of presentation. Implementers understood their responsibilities in the project.

Delco. This district began participating in the statewide school improvement project during the second year of implementation (1982-83 school year). During the first year of Delco's involvement, a core group of three volunteer teachers implemented the model in mathematics in each of the elementary schools in the district. Successful implementation during year one led to a district-wide mandate for model usage in mathematics by all elementary teachers. By the end of June 1984, district-wide implementation was accomplished.

As was the case in Danford, strong support from central office staff and school administrators was an important factor contributing to successful implementation. Two central office staff members were responsible for staff development. During the first year of implementation, the central office project coordinator adapted training materials developed by other veteran LEAs already involved in AT implementation. The elementary principals were oriented to the model and three core teachers from each elementary school were trained by the central office team (with some help from state staff) during after school sessions. They were given common planning time to develop AT units.

Bi-annual follow-ups were held to assist teachers with problem areas. Principals and central office supervisors expected to see AT use, and provided on-site assistance when necessary. With the help of implementing teachers, supervisors developed and used a classroom observation checklist based on the AT model.

During the second year, the remaining elementary teachers not yet using AT were trained by central office staff with coaching provided by supervisors, principals, and veteran teachers.

The rapid progress of AT implementation in a relatively short period of time can be attributed to several factors including: (1) the support of central office staff and school administrators; (2) the use of the expertise and materials of veteran districts; (3) the decision to train a core group of teachers at each elementary school during the first year and modifying district-wide expansion strategies based on the experiences of these core teachers; and (4) a staff development approach which was uniform and included systematic assistance by all role groups through formal follow-up sessions and routine supervision of mathematics instruction, and through informal coaching among teachers.

Pilot/District

Pitmore and Paisley had successful projects using a pilot/district implementation strategy. Both districts were involved in the state sponsored improvement effort for the three years. By the end of year three, Pitmore was implementing ML in mathematics in six elementary schools with plans to eventually use the model for all elementary mathematics instruction. By June 1984 Paisley was using AT in all 25 of its schools for mathematics instruction. The staff development approaches used by each of these districts are described below.

Pitmore. ML implementation began in one elementary school with three teachers in mathematics. Decisions to expand implementation during subsequent years were based on the proven "objective" value of ML (student test scores increased, especially in Chapter 1 schools) and also on the "subjective" value of the model (teachers found ML useful for teaching elementary mathematics).

By the end of year three, ML had expanded to a total of six elementary schools, with plans for further expansion in subsequent years. A major factor contributing to the success of ML was the district's unique approach to staff development.

During the first year of the project, three teachers were selected to participate in the state-sponsored training activities. These pilot teachers, under the leadership of the central office project coordinator, formed the project team that was responsible for project planning, decision-making and implementation. Project success led to the decision to expand project participation on a voluntary basis to additional schools during years two and three.

Volunteer teachers at the selected expansion schools were trained at workshops conducted by the project team. Teachers received feedback from principals and supervisors during classroom observations. Coaching was provided during year two by the three pilot teachers and during year three by two pilot and two "second generation" teachers. These teachers were given release time (one half day per month) to act as resource teachers, providing on-site technical assistance (i.e., coaching and trouble-shooting) to implementers. Implementing teachers were also given release time to meet with the resource teachers.

Several factors contributed to the successful implementation of ML: (1) a mathematics curriculum that could be easily adapted to ML; (2) a high level of administrative support, especially from the central office project coordinator; (3) a group of good and enthusiastic teachers, especially the resource teachers; (4) a high degree of interaction among all the role groups involved; (5) the use of data-based information to guide project decisions;

and (6) a unique staff development concept that provided formal, on-site coaching on a systematic basis to implementers. Teachers were given release time to attend training activities.

Paisley. AT implementation began in four schools (two elementary and two junior high/middle schools) with 20 teachers in grammar and mathematics. Because of the positive outcomes resulting from AT use in mathematics (teachers felt that the structure of the AT lesson was an effective way to teach mathematics and student performance increased), by June 1984 AT was being used for all mathematics instruction with a high degree of fidelity. This extensive and accurate use of AT was made possible by the well-planned and executed training carried out by the central office team responsible for model implementation.

Training during the first two years consisted of a series of workshops conducted by the central office team for volunteer teachers. Coaching was provided during the routine supervision of mathematics instruction. With the goal in year three of AT implementation for all mathematics instruction, central office staff began using veteran teachers and school administrators as turnkey trainers.

Training during the third year of the project consisted of four workshops conducted by central office staff. Principals and key teachers from all 25 schools participated in the first three workshop sessions. The first workshop consisted of rationale and theory building with demonstration and feedback. Teachers were then asked to use the model in a selected class. Central office staff observed each implementing teacher twice, providing feedback and assistance when necessary.

During the second workshop, central office trainers went over common problem areas based on teacher and principal feedback, and identified during

classroom visits. Trainers presented ideas to facilitate model implementation and relevant research on classroom effectiveness during the third workshop session.

After the third workshop session veteran teachers and principals who had been involved in model implementation for at least one year, were asked to train the other teachers in their school during in-school workshops. (Students were dismissed early one day a week in order to provide time for inservicing new teachers.) Central office staff assisted these turnkey trainers by providing training materials and by assisting in the design of the workshop format. Central office staff also provided feedback and assistance to the turnkey trained teachers as they attempted to implement the model in their classrooms.

All implementing teachers participated in the fourth inservice session held toward the end of the school year to share ideas and solve problems experienced during model implementation. By the end of the school year, almost all teachers were using the model and had been observed and given feedback by central office staff and school administrators. Informal coaching was provided by veteran teachers.

While program leadership and the relative simplicity of AT were strong factors influencing the success of the project, Paisley's staff development approach was probably the most influential factor contributing to successful model implementation. Training included not only rationale and theory building, but demonstration and modeling, practice and feedback, and on-site coaching. The workshop format included the following elements: (1) after school sessions with snack and pay; (2) a multidisciplinary training team using a multiple activity approach; (3) small group discussions conducted by teachers; (4) incremental training progressing through more sophisticated

learning with chances to use the model between workshop sessions; and (5) modifications of workshop format or materials on the basis of feedback.

Capacity Building

Charters and Cannes had successful projects using a capacity building implementation strategy. Both districts were involved in STL implementation for three years. By the end of year three, Charters had teachers in 15 elementary and secondary schools implementing STL in all academic subjects. In Cannes, teachers in two secondary schools implemented STL in mathematics. The staff development approaches used by each of these districts is described below.

Charters. STL implementation began in one middle school with 17 teachers using the model under the leadership of the school's principal. These teachers were trained by either state staff at the state sponsored workshops or were turnkey trained by the principal and state trained teachers. During year two veteran middle school teachers conducted workshops for other interested teachers across the district, and many of these teachers voluntarily implemented STL in their classrooms.

During year three, central office staff began to provide support for model dissemination across the district. With this increased push for expansion of model usage, the staff development approach used during the third year of the project was much more systematic than the approach used during year two. All central office staff and school administrators attended a model orientation session conducted by key veteran teachers. Interested principals could then ask the key teachers to inservice volunteer teachers within their schools. Inservice consisted of a three-phase process of awareness sessions, training sessions, and follow-up assistance.

For the 1984-85 school year, plans included training a core group of three teachers in each school using the three-phase inservice process. The core team of teachers would then be responsible for disseminating the model to other teachers in their schools.

As a result of this more systematic approach to staff development, many more teachers became aware of and began using STL in a wide range of schools across the district. Increased central office support was a strong factor contributing to this systematic comprehensive staff development effort during years three and four.

Cannes. The district began STL implementation in its one high school in a variety of subject areas. A pilot team was trained at the state training sessions. This team, under the leadership of the central office project coordinator, oriented all principals, supervisors, and high school teachers. Volunteer teachers received more intensive training, and by the end of year one approximately 10 teachers were using STL. Coaching was done informally by the pilot team.

Due to the high school's success, one of the three middle schools began using the model during the third year of the project to improve student achievement in mathematics. Veteran high school teachers trained and coached the middle school teachers.

The success of STL at the middle school influenced central office's decision to expand the model into the other two middle schools during year four with the goal of model usage in all mathematics classes from grades six to twelve. Core teams of teachers at the high school and three middle schools were established and given the responsibility to turnkey train all other mathematics teachers in their schools.

As was the case in Charters, model success during initial implementation led to increased central office interest in and support of model expansion. Staff training became more systematic with core teams of teachers established at schools and responsible for turnkey training other teachers within the school. This approach led to increased model awareness and implementation.

Lighthouse School

Laurel and Lambert had successful projects using a lighthouse school implementation strategy. Lambert's improvement project was in effect for three years, whereas Laurel was involved for only two years. Both districts directed their school improvement efforts to the middle school level. By the end of year three, Laurel had expanded implementation from one to five schools in social studies, and implementation in Lambert had grown from one to three schools in mathematics and reading/language arts. The staff development approaches used by each of these districts are described below.

Laurel. Laurel began ML implementation during the second year of the school improvement program (1982-83 school year) in one middle school with two teachers using the model for a single social studies unit in economics. Due to the success of the project at the pilot "lighthouse" school, five additional middle schools began ML implementation during the second year of the project. An additional unit in map skills was developed using the ML approach. Plans for year three included expanding the two social studies units into all sixth grade classes and developing and pilot testing two new units in U.S. history and American government.

The success of the ML project in the short period of two years can be attributed to the organized, systematic way in which the project was implemented, the dedication and enthusiasm of the teachers, and the support of school administrators and central office staff, especially the social studies

supervisor who coordinated the project. The two pilot teachers received training at the state-sponsored workshops. They were given release time to develop a detailed and comprehensive economics unit using the ML approach. They were observed by and received assistance from the social studies supervisor on a regular basis.

During the second year of the project, volunteer teachers were trained by the central office coordinator and the pilot teachers. During the summer months a new map skills unit was developed and revisions were made to the existing unit on economics. Bi-monthly meetings were held with the project coordinator to share ideas and solve implementation problems. Teachers were observed and coached by the coordinator and the veteran teachers as they implemented the units. Fidelity of implementation was high and the teachers kept detailed records of student progress. More turnkey training by veteran teachers occurred during year three to facilitate the expansion of ML into all sixth grade social studies classes.

ML implementation in Laurel began on a small scale but rapidly increased as project success became known across the district. Materials development and training were systematic and thorough. Although the project was coordinated by the social studies supervisor, teachers influenced project decisions. The central office coordinator recognized the importance of providing continuous coaching and follow-up assistance, pressing for fidelity and intensity of implementation, coordinating communication across role groups and schools, and providing release time for planning and training.

Lambert. TV implementation began in one middle school with 18 teachers in a variety of subject areas. The decision to implement TV was made by the pilot school principal and was perceived as a staff development activity. The model was selected as a way to increase school unity and cohesion by

fostering teacher interaction and cooperation. To accomplish this goal, the project was coordinated by two pilot teachers with support from the principal and central office staff.

During the first year, the pilot teachers who were trained at the state sponsored workshops oriented all middle school teachers to the theory and rationale of the TV model, and began implementation. Successful implementation at the pilot middle school led to the decision to expand model usage to the other two middle schools in the district during year two. The pilot teachers were given release time to help train and coach new implementers, who then turnkey trained other educators within their schools.

Because the model did not fulfill a priority at the other middle schools, the project was unsuccessful and was terminated after year three. TV remained successful at the pilot middle school because it fulfilled a school need and because it was coordinated by teachers and perceived as an instructional improvement (not evaluation) effort.

Staff Development: Effective Practice

The staff development approaches of the eight successful school improvement projects had several elements in common across all four implementation strategies. A local advocate or team of advocates provided enthusiasm and coordinated training. Training included rationale and theory building, demonstration, a chance for practice and feedback, and on-site coaching. Training was made as convenient as possible. Training and coaching were conducted at convenient times and places. Teachers were either given release time or were paid to attend training activities. Training activities were flexible, allowing for modification based on feedback. Contracting occurred, with trainers and trainees knowledgeable of their project responsibilities ahead of

time. Key teachers developed materials at implementing schools, and engaged in turnkey training and coaching. Training provided by the SEA helped to maintain staff interest, and strengthened their knowledge base on effective teaching, use of the adopted model, and processes of planned change. Minimal assistance for on-site training from outside the LEA was needed or used. Staff development was effective since implementation goals were accomplished, the models were used with fidelity, and instructional gain was evident.

Common elements of staff development were also apparent within each implementation strategy. Staff development in the district-wide projects was coordinated and conducted by central office staff using a common format and training materials. This was done to facilitate uniform, comprehensive training in a short time period. This common format included initial training, follow-up workshops, and formal, systematic coaching during routine supervision of instruction. All administrative and supervisory staff were oriented before training began to insure their support of and involvement in the project. An example of this support was arranging release time, and assisting in training and coaching. Teachers were not used to any great extent for training. However, in both districts key teachers were used for coaching. The relative simplicity of AT made it the easiest model to implement on a district-wide basis. The model did not require extensive training because it did not involve the acquisition of a great deal of new information different from existing practice or the development of new instructional materials. Also, since the model was being implemented in only one subject area (mathematics), training could be more specific. The staff development approaches used by the district-wide projects were successful as evidenced by the institutionalization of the AT model at the designated grade levels by the end of year three.

Staff development in the pilot district projects was also coordinated and conducted by central office staff to insure uniform and comprehensive implementation. However, key teachers were more involved in training, coaching, and decision making than were the teachers in district-wide projects. After the decision was made to offer the model district-wide, pilot teachers initially involved in the projects became turnkey trainers with central office support and assistance. In Pitmore, teachers were given release time to formally coach fellow implementers, while in Paisley, teachers engaged in informal coaching. In both districts, coaching was also provided by central office staff and school administrators during the routine observation/supervision of instruction. AT was easier to implement, allowing trainers to address additional related issues such as ideas to facilitate lesson development or relevant research on classroom effectiveness. ML required more assistance in curriculum planning and materials development. The staff development approaches used by pilot district projects were successful as evidenced by the decision to expand as a result of positive outcomes experienced during implementation and the effective expansion of model usage into the designated subject areas and grade levels.

Training in the capacity building projects was conducted by the teachers. Training began as a global orientation to the model followed by more in-depth training for interested volunteer teachers. Initial training was not systematic. However, successful experiences during initial implementation resulted in increased central office support for model expansion. Staff development became more systematic to meet these more definitive expansion goals. Core teams of teachers were established at schools, and were responsible for turnkey training other teachers.

In the lighthouse school projects, training during the initial year of the project was provided to pilot teachers at state sponsored training activities. Because the projects began in single schools, the model selected was related to school goals, and the pilot teachers were involved in all aspects of project implementation. In one project, the pilot teachers were responsible for all staff development with the assistance and support of the pilot school principal. In the other project, the central office project coordinator was responsible for training and coaching with the help of the pilot teachers. Turnkey training was used as additional schools began to implement the models. Subsequent model expansion to other schools was more successful in Laurel because of central office involvement and because of the model's applicability to the goals of many of the schools in the district.

District size made no difference in choice of implementation strategy. For instance, for each of the implementation strategies, a middle-sized LEA was involved (24 to 29 schools). The capacity building and the lighthouse straties were used by the two smallest LEAs (9 and 12 schools). The large urban district (144 schools) used a pilot-district strategy. District size also made no difference in the choice of staff development approach. For instance, teachers took a key role in training in the largest LEAs, in both small LEAs, and in two middle-sized districts. Teachers as trainers and coaches were effective in their own schools, but could maintain that effectiveness in other schools only when there was strong administrative support and coordination. The latter was particularly important for district-wide and pilot district strategies, or when more than three or four schools were involved.

The staff development approaches of all eight projects were successful in accomplishing the districts' implementation goals reflected by the implementation strategies selected. Institutionalization of the models and "executive control" by the teachers was apparent in all eight LEAs, influenced strongly by the nature and extent of staff development activities. It is hoped that the findings of this study can offer guidance to state and local policy makers in making staff development efforts more successful and cost effective.

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